Idaho Disease

BULLETIN

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West Nile Virus Testing and Reporting in Idaho

The Idaho State Bureau of Laboratories (ISBL) tested 89 individuals for WNV and St. Louis encephalitis virus in 2003. Four individuals were determined to have WNV-specific antibodies suggestive of a recent infection: three had out-of-state exposures, and one was exposed to WNV-positive alligators in Idaho. Although none of these infections apparently occurred through mosquito bites in Idaho last summer, infections due to mosquito bites in Idaho could occur this summer.

Approximately 80% of WNV infections are believed to be asymptomatic, while 20% may manifest as West Nile fever, a mild febrile illness lasting only a few days. Less than 1% of infections lead to a severe neuroinvasive disease such as meningitis, encephalitis, meningoencephalitis, or an acute flaccid paralysis. Severe infections may lead to permanent disability or death.

The ISBL will test samples for WNV from those patients experiencing neuroinvasive disease. Testing will also be available for pregnant women or their newborns suspected of having a West Nile virus infection. Testing of patients with a febrile illness in the absence of any neuroinvasive disease should be directed to a commercial laboratory. Many commercial laboratories are now using FDA and CDC-approved WNV serologic test kits.

Laboratory testing in Idaho

During 2004 the ISBL will test serum or CSF samples for WNV and St. Louis encephalitis virus-specific antibodies from anyone with a clinically compatible neuroinvasive disease.

Antigen testing by PCR is not recommended for WNV. Antigen levels, although demonstrable during the asymptomatic incubation period, tend to drop precipitously below detectable levels soon after clinical onset of illness. IgM seroconversion appears early and is long-lived (it has been detected for over 500 days in some individuals). IgG is also detectable within a few days of onset of illness in most cases. Acute serum or CSF samples should be collected within 3–10 days of onset of illness, convalescent samples may be drawn 2–3 weeks later. Paired sera is recommended; however, do not wait to send paired sera together. Testing of acute sera or CSF will be done as soon as they are received.

Reporting

West Nile virus infections are reportable in Idaho. Any aseptic meningitis or encephalitis case is also reportable.

WNV and pregnant women

The CDC recommends that pregnant women who have meningitis, encephalitis, acute flaccid paralysis, or unexplained fever who have come from or traveled to an area of

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WNV transmission should have serum (and CSF, if clinically indicated) tested for antibodies to WNV. The ISBL will test samples from women that appear to have a clinically compatible illness. If serologic or other laboratory tests indicate recent infection with WNV, these infections should be reported to the health department, and the women should be followed to determine the outcomes of their pregnancies. CDC has created a voluntary registry for pregnant women with WNV.

The clinical consequences of fetal infection have not been determined.

Evaluation of infants born to mothers infected with WNV during pregnancy

When an infant is born to a mother who was known or suspected to have WNV infection during pregnancy, clinical evaluation is recommended. Further evaluation should be considered if any clinical abnormality is identified or if laboratory testing indicates that an infant might have congenital WNV infection.

CDC has a website explaining further issues related to WNV and pregnancy:

http://www.cdc.gov/ncidod/dvbid/westnile/congenitalinterimguidelines.htm

Blood donor screening

All blood donors are screened for West Nile virus in two ways:

1. All donors are asked basic clinical questions prior to donation. If they have or recently had a clinically compatible illness they are deferred from donation.
2. All blood and blood products collected from well donors are screened for WNV antigen in a Red Cross–sponsored laboratory. Antigen detection methods are used because asymptomatic donors may be viremic, and thus contagious, at the time of donation. All products are withheld from distribution until WNV testing is completed. Any positive product is evaluated a second time with a confirmatory test. Any suspicious product found positive by the confirmatory test is destroyed.

IDAHO DEPARTMENT OF HEALTH & WELFARE

Diagnosis and Management of Foodborne Illnesses

Each year, an estimated 76 million persons nationwide get sick, more than 300,000 are hospitalized, and 5,000 die as a result of foodborne illnesses. Primarily the very young, the elderly, and the immuno-compromised are affected.

A wide variety of pathogens may cause illness from contaminated foods. Some pathogens frequently associated with foodborne illness are toxigenic *E. coli*, *Salmonella*, and *Shigella*.

The Idaho State Office of Epidemiology and Food Protection (OEFP) routinely receives reports of infections caused by these pathogens. Each reported case is investigated to confirm the diagnosis, determine if the infection was foodborne, and attempt to determine the most likely source of infection. Reported risk factors for cases documented in 2003 are listed in table 1. Some individuals reported more than one risk factor.

Of the implicated risk factors, food contamination or improper food handling was the most commonly reported probable source for *Salmonella* and *E. coli* in 2003. Animal exposures, person-to-person spread, and travel (foreign and domestic), were also implicated to a lesser degree. *Shigella,* when a risk factor could be identified, was reported to have spread person-to-person most frequently in 2003. Unfortunately, risk factors associated with the acquisition of most bacterial infections causing gastroenteritis in Idaho remain unidentified despite thorough investigation.

Table 1: Selected bacterial diseases reported to OEFP in 2003* by the most likely source of infection

Reported Disease	Total reports	Food	Animals	Person to Person	Travel	Other or Unknown‡
***E. coli*†**	101	20	13	6	4	60
Salmonella	181	39	18	7	20	83
Shigella	36	4	1	10	7	18

*Provisional data
†*E. coli* O157:H7 and other toxigenic *E. coli*
‡Other or unknown category: may include occupational exposures, waterborne or unknown risk factors

The Centers for Disease Control and Prevention recently published "Diagnosis and Management of Foodborne Illnesses: A Primer for Physicians and other Health Care Professionals" in the Morbidity and Mortality Weekly Report (MMWR) **April 16, 2004 / 53(RR04); 1–33.** The primer may be viewed at the following website:

http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5304a1.htm

The primer provides practical and concise information on the diagnosis, treatment, and reporting of foodborne illnesses. Sections are devoted to bacterial, viral, parasitic, and noninfectious (chemical) causative agents.

The primer reports that recent changes in human demographics, food preferences, changes in food production and distribution systems, and microbial adaptation, among other things, have led to the emergence of novel pathogens and an increase in traditional foodborne diseases. Increasing travel and trade opportunities may also lead to a greater risk of contracting and spreading a foodborne illness.

Physicians and other health care professionals play a critical role in prevention and control of food-related illnesses. Foodborne illness, even prior to the identification of an etiologic agent, is reportable in Idaho. This alerts the health department to a potential problem with either the food supply or the handling of foodstuffs. Timely reporting will allow public health officials to investigate the cause of a suspected foodborne outbreak and make appropriate public health interventions to reduce or eliminate the continued spread of disease.

Year-round Flu Surveillance

The 2003–2004 flu season in Idaho, as defined by positive samples detected at the ISBL, occurred from the last week of October until the last week in January. The flu season seemed to start earlier than a typical flu year, but ended earlier as well.

Year-round influenza surveillance in Idaho is encouraged to detect the emergence of a pandemic strain of influenza.

Respiratory samples from individuals with a clinically compatible illness may be submitted to ISBL for influenza testing and strain determination, free of charge, year-round.

Questions? Please contact Dr. Leslie Tengelsen with the State Office of Epidemiology and Food Protection (208) 334-5939 or Colleen Greenwalt, Virology Chief with ISBL at (208) 334-2235 ext. 228

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